

BY HAROLD J. ROSEN

Parameters for a Computer Program

Preparation of specifications by means of a computer and its attendant advantages and problems is discussed by the chief specifications writer of Skidmore, Owings & Merrill, New York.

Several architectural and engineering firms have now had about two years' experience in the preparation of specifications by means of computers. Each one of these firms has experimented with differing computer programs. Some of them with in-house 1130 computers have developed their own programs, each in its own fashion. Others have accommodated their requirements to language programs such as the IBM Text 90, or the IBM Data Text which are not specifically programmed for the needs of specifications. These latter programs are workable, but do not have certain built-in parameters that permit easy computer manipulation of required tasks.

At the outset, several factors inhibited the development of a program that was ideally suited for the production of specifications by a computer. Manufacturers of computer hardware and software were not familiar with the requirements of architectural and engineering specifications. Conversely, few architects and engineers were conversant with computer hardware, software, and programming that enabled them to assemble the right equipment and programs that would satisfy their requirements. In addition, cost constraints prevented the individual office from pursuing research and development of equipment and programs.

Fortunately, several larger firms were able to pioneer with in-house computers. These computers were available as a result of their firm's need for computations of engineering problems. In-house engineers were able to develop simple language programs that

were designed to manipulate text. However, these early programs were not sophisticated and did not solve all of the problems. With the advent of the IBM Data Text time-sharing language program, major architectural firms that were able to absorb the development costs prepared master specifications and began to utilize the Data Text Computer program in spite of its shortcomings. As a result of these pioneering efforts two trends have emerged. First, is the fact that master specifications can be prepared based upon the firm's general practice. Second, the parameters of a program designed to meet the requirements of specifications writing can be set forth more clearly.

Master specifications can be altered and tailored to meet project requirements with the computer. They can be quickly updated in the computer to encompass new materials developments and construction practices. The former odious connotation that master specifications are "canned" and "frozen" has been dispelled. The computer permits easy, frequent, and instantaneous updating once the decision has been made on the required changes.

The parameters for a language computer program have evolved and can be set forth as follows:

1. Ability to edit text by adding, deleting, or changing on a line or a paragraph basis.
2. Provide "disappearing" notes on master specifications for the following applications:
 - a. Notes for draftsman to indicate items which appear on drawings.
 - b. Notes to specifier identifying necessary coordination with other sections.
 - c. Notes to specifier for a single selection from a group of choices.

3. Provide for upper- and lower-case letters.

4. Paragraph renumbering automatically.

5. Page numbering automatically.

6. Indenting, underlining, and spacing of text.

7. Ability to provide headings and footings on each page for job numbers, section titles, dates, etc.

8. Automatic generation of specific information separately as follows:

- a. Table of Contents.
- b. Samples.
- c. Shop Drawings.
- d. Guarantees.
- e. Certificates.
- f. Tests.

9. Special characters to include °F, ±, L, W, and other symbols peculiar to specifications.

10. Reference code numbers on masters to provide a key for use of typist to facilitate revisions.

These parameters for a computer specifications program are coming into being as a result of the interest on the part of computer service bureaus that are interested in attracting architects and engineers as clients, and now understand their needs and can write programs accordingly. In addition, a professional organization of engineers, APEC (Automated Procedures for Engineering Consultants), has virtually bypassed both CSI and AIA in developing a computer program for specifications writing. This association has outlined the parameters for a specifications writing program which is being prepared by a computer programming organization. The program, which will be available to members of APEC in 1970, embodies many of the parameters outlined here.

As of now, this program appears to offer the best that will be available for the handling of specification text on computers. APEC is located at 627 Salem Ave., Dayton, Ohio 45406.

III D-Construction
E preparation

Contracting Plasterers Have Changed Their Name

The Contracting Plasterers' and Lathers' International Association has changed its name to the International Association of Wall and Ceiling Contractors (IAWCC).

The action was prompted by the growing diversification of its membership and was taken at the association's 52nd annual convention in Las Vegas last month. IAWCC, in deference to its growing number of dry wall and ceiling assembly members, also added another vice president to oversee its dry wall and other diversified activities.

Among other actions, IAWCC:

- Endorsed the current drive for state-wide and regional bargaining.
- Approved the use of stilts and other on-the-job devices approved by appropriate safety organizations, and urged unions to adopt them.

• Supported the activities of the American Subcontractors Association, and urged formation of new chapters.

On the labor front, Vincent Appruzese, a leading labor relations lawyer, told the delegates that their best bet on jurisdictional disputes is to take them to the National Labor Relations Board. Although more preparation is required, he said, the advantage rests with the binding impact of an NLRB decision on subsequent disputes. The other alternative, the National Joint Board for the Settlement of Jurisdictional Disputes, sets no precedents, he said. The Joint Board is currently struggling for existence in some form under a recently signed interim agreement (ENR 11/13 p. 53).

Chicago Union Rejects 61% Wage Boost Offer

Chicago Local 150 of the International Union of Operating Engineers seeks a wage-fringe increase of \$5.25 an hour in a three-year labor contract. Last week, it rejected an offer of \$4.00 an hour over five years from the Builders' Association of Chicago.

The union's current four-year contract, covering 1,000 to 1,500 operating engineers employed by association members, expires December 31.

The union's top rate is now \$6.05 an hour in wages and 50 cents an hour in fringe benefits. Its demand, if granted, would raise the rate to \$10.40 an hour, and fringes to \$1.40 an hour by 1972 representing an 80% increase over three years. The contractors' offer comes to 61% over five years.

"The 61% increase would raise an operating engineer's annual income, including fringe benefits, to \$21,000 by

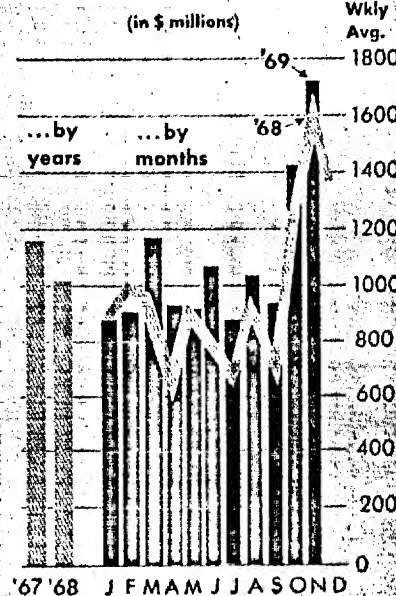
New Plans in November

Reported by ENR

	4 Wks. Value (\$ Mil.)	Chg. fr. Mo. Ago %	Yr. Ago %	Cum. 11 Mos. Value (\$ Mil.)	Chg. '68-'69 %
All Construction Plans	6,878	+21	+3	51,677	+10
Water Use & Control	1,926	+42	+334	7,626	+77
Waterworks	329	+306	+149	1,256	+26
Sewerage	493	+20	+72	3,215	+31
Earthwork, waterways	1,105	-21	+150	3,155	+263
Transportation	452	+391	+85	2,932	+59
Bridges	32	+45	+93	438	+57
Highways, streets	117	+234	+93	1,054	+82
Airports and space	205	+561	+3	1,311	+24
Subways and tunnels	98	+2350	+1	129	+62
Elect. Gas, Communicat'n	290	+43	+152	2,667	+15
Industrial Plants, Private	396	-9	+27	4,359	+7
Manufacturing	211	-43	+12	3,128	+6
Industrial Plants, Public	38	-28	+19	451	+44
Commercial Buildings	667	-3	+183	6,707	+40
Offices and banks	425	-3	+84	3,654	+45
Stores, shopping centers	242	-13	+1	3,053	+35
Mass Housing, Private	940	-8	+42	9,460	+51
Apartments	715	+10	+50	6,577	+61
Hotels, motels, dorms	226	+3	+22	2,883	+33
Mass Housing, Public	74	-5	+40	912	+5
Educational Buildings	1,063	+62	+49	7,435	+24
Hospital & Medical Bldgs	446	+17	+36	4,081	+24
Gov't Service Buildings	194	+58	+23	1,705	+27
Other Construction	391	+74	+196	3,342	+27

New plans for construction in 50 states with these following minimum costs: Industrial plants, heavy and highway construction \$100,000; Other buildings \$300,000. * Per cent change based on avg. wk.

New Construction Plans



Month's Plans Reach Record Pace

New plans for construction flowed to the drawing boards in November at a record pace of \$1.7 billion a week, according to ENR figures. Last month's spurt lifted the 11-month total to a record \$52 billion poured into ENR's backlog of construction plans. This is 11% more than last year.

High performers for the month were plans for earthwork and waterways, educational buildings, sewerage, waterworks, electric, gas and communications, and private mass housing.

But not all types were winners. Slip-page showed in plans for manufacturing plants, public mass housing, stores, shopping centers and in transportation.

Educational buildings hit a resounding high for 1969, soaring far above October and November a year ago. To date, the 1969 total pulls 2% ahead of 1968; a month ago, 1969 trailed 1968 by 3%.

Earthwork and waterways plans topped \$1 billion for the second consecutive month, enlarging the year-to-date gain to 226%.

Waterworks plans scored a record. This high boosted the 11-month comparison to plus 26% from a previous month plus of 7% (see table).

Sewerage plans hit their second highest notch for 1969 as construction grants for waste treatment plants were bumped up to an even \$1 billion by Senate action on the public works bill (ENR 11/20 p. 29). If the House follows suit, an appropriations-equals au-

thorizations condition will exist in the Federal Water Pollution Control Administration's waste treatment plant program for the first time since 1963.

Private mass housing bettered last month as well as November, 1968, dropping one notch to plus 51% in the year-to-date advantage.

Public mass housing, on the other hand, fell off all across the board and gave up 8% in the cumulative total change, dropping to plus 5% from plus 13% in October.

Manufacturing plants slid to their second lowest tally after bouncing to a record in October.

Transportation plans did better in November than in October but generally stayed well below 1968 in the year-to-date figures.

Commercial buildings did well generally but stores and shopping centers took a dip below October and lost 4% in the year-to-date total. They are down to plus 35% from 39% in October.

Office and bank buildings rapped out their third-highest count in 1969, beaten only by October and March. They made up the 4% cumulative loss in commercial buildings and moved from a plus 41% in October to the present plus 45%.

Hospital and medical buildings also reached their third-highest point for this year, showing appreciable increases over October and last November. Their 11-month comparison to 1968 at plus 24% is 1% higher than October's figure.